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Executive Secretary

21 Sept '88

Date

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Declassified in Part - Sanitized Copy Approved for Release
2013/01/30 : CIA-RDP90G01353R001400120012-5

Congress of the United States
OFFICE OF TECHNOLOGY ASSESSMENT
WASHINGTON, DC 20510-8025

September 14, 1988

The Honorable William H. Webster
Director
Central Intelligence Agency
Washington, DC 20505

Dear Mr. Webster:

I am pleased to enclose OTA's Technical Memorandum, *Reducing Launch Operations Costs: New Technologies and Practices*. At the request of the House Committee on Science, Space, and Technology and the Senate Committee on Commerce, Science, and Transportation, OTA is carrying out an assessment of Advanced Space Transportation Technologies. As part of this broad assessment, OTA has just published this Technical Memorandum.

Reducing the costs and improving the reliability of space transportation are key to making more effective use of the space environment for commerce, science, exploration, and defense. In order to achieve these objectives, the United States needs to give greater attention to launch and mission operations, the collection of processes and procedures used to ready vehicles and spacecraft for launch and insertion into orbit. Operation costs can equal up to 45% of total launch expenditures.

The United States already uses or has under development a variety of technologies that can make launch operations more reliable, efficient, and cost effective. However, as this technical memorandum explains, the United States has spent relatively little effort in applying them to operations. Just as important as cost saving technologies are appropriate management methods, or strategies, to put these technologies to work. In some cases, OTA has found, cost savings could be achieved by streamlining operations and reducing the burden of documentation and reporting requirements that have slowly expanded over the years.

I hope you will find this Technical Memorandum useful and informative.

Sincerely

Jack Gibbons

John H. Gibbons

1-7314R

NEWS from:

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

U.S. House of Representatives

Robert A. Roe, Chairman

Manuel Lujan, Jr.
Ranking Republican Member

100-#186
FOR RELEASE
September 14, 1988 A.M.s

SPACE SUBCOMMITTEE ANNOUNCES RELEASE OF AN OTA STUDY ON REDUCING LAUNCH OPERATIONS COSTS

Congressman Bill Nelson (D-FL), Chairman of the Subcommittee on Space Science and Applications, today announced the release of a study on Reducing Launch Operations Costs by the Congress' Office of Technology Assessment. This study is a companion piece to the "Buyer's Guide" -- Launch Operations for the Future that was published by the OTA in July. Both of these studies had been commissioned by the Committee on Science, Space, and Technology because of its interest in finding the best and most cost-effective means for meeting the nation's future space transportation needs.

Copies of this report (Reducing Launch Operations Costs - New Technologies and Practices, A Technical Memorandum) may be obtained from the U.S. Government Printing Office (GPO), Superintendent of Documents, Washington, D.C. 20402. Phone number (202) 783-3238. The GPO stock number is 052-003-01118-2. The price is $4.50.

The OTA report finds that launch and mission operations costs constitute a sizable portion of the expense of placing payloads into orbit. Further, the OTA finds that the technologies that would be required to reduce the recurring costs of ground and mission operations already exist today or are currently under development. However, dramatic reductions on the order of 5 to 10 times could only be achieved under highly limited conditions such as those that would exist in the presence of very high launch rates.

To achieve possible cost reductions, the OTA recommends that the Federal Government formulate clear long-term goals and a well-defined plan for developing and incorporating new technologies into space transportation operations. The OTA also concludes that significant changes may have to be made to the institutions that are currently responsible for managing launch operations.

Finally, the OTA finds that changes in management practices and design philosophies, the stimulation of the private sector, and the study and adoption of appropriate airline methods could all increase the efficiency and reduce the cost of ground operations.

In announcing the release of the OTA report, Chairman Nelson stated, "This report is an excellent addition to the ongoing dialogue regarding how we can best improve this country's space launch operations. I hope that all of us within the space launch community will study this document, reflect on its findings, and then work together to make the improvements that are feasible and justifiable."

Congressman Robert S. Walker, (R-PA), the Ranking Republican of the Subcommittee, said "In just a few days America will return to space with the launch of Discovery. It is important to us as a nation that we regain our rightful position of space leadership. In a period of tight federal budgets it will be critical to our success to make major reductions in the operational costs of our space system."

Staff Contacts: Dr. Terry Dawson (202) 225-7858

Congress of the United States
OFFICE OF TECHNOLOGY ASSESSMENT
WASHINGTON, DC 20510-8025

Hold for release until:
Wednesday, September 14, 1988, AM's

For further information contact:
Ellen Mika or Jean McDonald
(202) 228-6204

In its efforts to lower the costs of space transportation, the United States should pay more attention to the costs of launch operations, according to a Technical Memorandum released today by the Office of Technology Assessment. Launch and mission operations are the complex set of procedures necessary to prepare the Space Shuttle and other vehicles for launch and orbit. Operations costs can equal up to 45 percent of the cost of each launch.

Use of new technologies could reduce operations costs and provide greater flexibility and responsiveness, OTA reports. Technologies capable of reducing the costs of ground and mission operations exist today or are under development. These include technologies for built-in test equipment, management information systems, automated test and inspection, advanced thermal protection systems, fault-tolerant computers, adaptive flight control, automated handling of launch vehicles and payloads, computer-aided software development, and expert computer systems.

To make rational investments in new operations technologies, the federal government will have to develop clear long-term goals and well-defined plans for incorporating them into launch systems, says OTA. Current technology development programs do not focus enough on the savings possible by improving launch operations.

However, the dramatic cost reductions (factors of 5 to 10) suggested by the Air Force and NASA Space Transportation Architecture Study and the Advanced Launch System (ALS) program are probably not obtainable even with proposed new technology and new facilities, OTA reports. In addition to a new generation of launch vehicles and ground facilities designed to accommodate rapid turn around, such reductions would require high launch demand and payloads of uniform design and orbital characteristics.

Payloads suggested for the Strategic Defense Initiative, or the fuel and supplies needed to establish a moon base or to send crews to Mars, could satisfy such demanding conditions. However, the number and diversity of payloads NASA and DoD now plan to launch through the late 1990s do not meet the conditions necessary for dramatic cost reductions, according to OTA.

MORE

EXECUTIVE SECRETARIAT

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Remarks FYI

Executive Secretary

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Date

3637 (10-81)

JOHN H. GIBBONS
DIRECTOR

Congress of the United States
OFFICE OF TECHNOLOGY ASSESSMENT
WASHINGTON, DC 20510-8025

July 27, 1988

The Honorable William H. Webster
Director
Central Intelligence Agency
Washington, DC 20505

Dear Mr. Webster:

I am pleased to enclose OTA's Special Report, Launch Options for the Future: A Buyer's Guide. At the request of the House Commitee on Science, Space, and Technology and the Senate Committee on Commerce, Science, and Transportation, OTA is carrying out an assessment of Advanced Space Transporation Technologies. As part of this broad assessment, OTA has just published this Special Report.

Over the next several years, this Nation must make critical decisions regarding the direction and funding of space transportation systems. These decisions include improving existing launch systems, designing and procuring new launch systems, and developing advanced technologies. America's constrained budgetary environment and the lack of a national consensus about the future of the U.S. space program make this decisionmaking process more difficult and important than ever.

This Special Report describes the range of launch systems that exist now or could be available before 2010, and explores the costs of meeting different demand levels for launching humans and spacecraft to orbit. It also discusses the importance of developing advanced technologies for space transportation. Because a correct sense of future demand is critical to determine which space transportation systems would be most cost effective, this report takes the form of a "buyer's guide": it describes alternative options which the Nation could "buy" now, depending upon our future objectives. As such, it is designed to help members of Congress and the Executive Branch choose the space transportation system best suited to the space goals they feel the United States should pursue.

I hope you will find this Special Report useful and informative.

Sincerely,

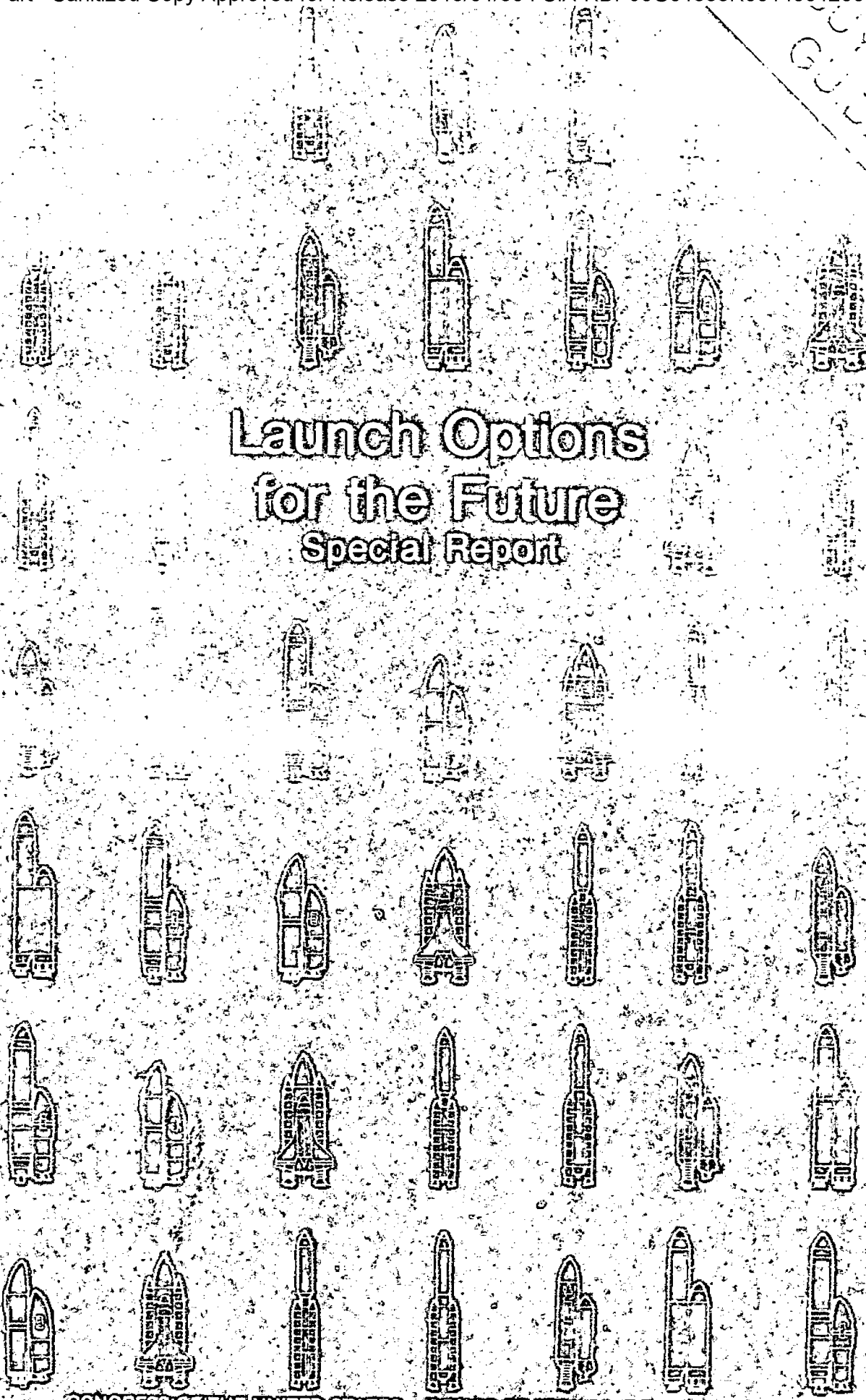
John H. Gibbons

Enclosure

L-231-15

Launch Options for the Future

Special Report



CONGRESS OF THE UNITED STATES OFFICE OF TECHNOLOGY ASSESSMENT